

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: GRUNDLER, Christoph

SERIAL NO.: 10/531,058

ART UNIT: 4177

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EXAMINER: Stuart, C. W.

TITLE: DEVICE AND METHOD FOR TEMPERING AND HUMIDIFYING GAS,
ESPECIALLY RESPIRATORY AIR

Amendment E: CLAIM AMENDMENTS

Claims 1- 24 (canceled by earlier amendments).

1. (canceled)

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

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12. (canceled)

13. (canceled)

14. (canceled)

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10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (canceled)

22. (canceled)

23. (canceled)

24. (canceled)

25. (canceled)

26. (canceled)

27. (new) A system for heating and humidifying a gas for direct delivery to a patient, the system comprising:

a fluid reservoir having a fluid therein;

a humidification chamber in fluid communication with said fluid reservoir, said

humidification chamber having a distribution chamber in an upper portion thereof, said distribution chamber having a sieve bottom, said humidification chamber having a gas inlet and a gas outlet, said gas inlet being at a lower portion of said humidification chamber, said gas outlet positioned at a level above said gas inlet, said humidification chamber having a filling material therein positioned between said gas inlet and said gas outlet, said filling material positioned below said sieve bottom of said distribution chamber, said filling material extending substantially entirely across an interior of said humidification chamber;

a pumping means connected to said fluid reservoir and to said humidification chamber, said pumping means for passing the fluid from said fluid reservoir into said distribution chamber above said sieve bottom of said humidification chamber such that the fluid flows downwardly through said sieve bottom and into said filling material;

a gas supplying means connected to said gas inlet of said humidification chamber, said gas supplying means for passing a gas through said gas inlet and into said humidification chamber such that the gas flows in said humidification chamber is in a direction opposite to a direction in which fluid flows through said filling material such that the fluid is moved through the gas so as to saturate the gas with fluid at between 95% and 100% humidity without aerosol formation and such that the gas flows outwardly of said humidification chamber through said gas outlet;

a respiratory gas flow generator being connected to said gas outlet and positioned between said gas outlet and the patient; and

a heating means cooperative with the fluid in said fluid reservoir, said heating means for elevating a temperature of the fluid in said fluid reservoir to a desired temperature of approximately 37°C.

28. (Currently amended) The system of Claim 27, said humidification chamber and said fluid reservoir being connected by a fluid circuit, said pumping means connected to said fluid circuit.